

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of: Chen, et al.

Serial No.: 10/770,737

Confirmation No.: 1009

Filed: February 3, 2004

For: MODULAR  
ELECTROCHEMICAL  
PROCESSING SYSTEM

\$  
\$  
\$  
\$  
\$  
\$  
\$  
\$  
\$  
\$  
\$

Group Art Unit: 1792

Examiner: Brenda A. Lamb

MAIL STOP APPEAL BRIEF-PATENTS  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

CERTIFICATE OF TRANSMISSION

I hereby certify that this correspondence is being electronically transmitted to the U.S. Patent and Trademark Office via EFS-Web to the attention of Examiner Brenda A. Lamb, on the date shown below.

12/8/09  
Date

  
Keith M. Tackett

REPLY BRIEF

Applicant submits this Reply Brief to the Board of Patent Appeals and Interferences in response to the Examiner's Answer dated October 13, 2009. Please charge any additional fees that may be required to make this Appeal Brief timely and acceptable to Deposit Account No. 20-0782/APPM/007164.C1/KMT.

**TABLE OF CONTENTS**

1.	Identification Page.....	1
2.	Table of Contents .....	2
3.	Arguments .....	3
4.	Conclusion .....	6

## ARGUMENT

Applicant supplements the argument in reply to the remarks presented in the Examiner's Answer dated October 13, 2009. In Examiner's Answer dated October 13, 2009, the Examiner presented three new arguments.

First, the Examiner presented a new argument based on Figure 31 of *Hongo et al.* (U.S. Patent 6,921,466, hereafter *Hongo'466*) in view of *Hongo et al.* (U.S. Patent 6,716,330, hereafter *Hongo'330*). The Examiner argued that *Hongo'466* teaches a detachable unit including two cells, a pretreatment cell and an electroless processing cell. Applicant respectfully disagrees.

*Hongo'466* teaches that units 111-118 and measuring instruments 141-143 in Figure 31 are interchangeable, and units 111, 112 are electroless plating apparatus (Figure 31, column 33 line 59 to column 34 line). The unit 112 for electroless Cu plating is further described in Figure 36. *Hongo'466* teaches that unit 112 is configured for electroless plating, cleaning, and drying in the same cell by changing substrate elevation, spinning and providing different processing liquids (column 37 lines 23-65). However, *Hongo'466* does not teach or suggest that the electroless unit 111 or 112 includes an electroless processing cell and a pretreatment/post treatment cell, as set forth in the pending claims.

The Examiner also argued that the plating unit in Figure 14 of *Hongo'466* is capable of dispensing electroless plating solution. However, the plating unit of Figure 14 also does not include a pretreatment/post treatment cell. As described with Figure 12 which is a plan constitution of the plating unit in Figure 14, the plating unit 2 has a substrate treatment section 2-1 for performing plating treatment and its attendant treatment, and a plating liquid tray 2-2 for storing a plating liquid (Figure 12, column 18 line 47-64). An electrode portion 2-5 held by an arm 2-4 swings between the plating liquid tray 2-2 and the substrate treatment section 2-1. However, the plating liquid tray 2-2 is not a treatment cell. Therefore, the plating unit 2 in Figure 14 also does not teach

or suggest an electroless module having an electroless processing cell and a pretreatment/post treatment cell, as set forth in the pending claims.

The Examiner further argued that the combination of cells in Figures 14 and 49 of *Hongo'466* in view of *Hongo'330* teaches the claimed subject matter. Applicant respectfully disagrees. As discussed above, *Hongo'466* teaches that the plating unit 2 in Figures 12-16 and plating module 512 in Figures 47 and 49 have one substrate treatment section 2-1 and one plating liquid tray 2-2, which is not a treatment cell. Thus, *Hongo'466* does not teach or suggest a plating unit (or an electroless unit) having a plating cell and a pretreatment/post treatment cell. *Hongo'330* teaches a substrate processing system comprises load and unload units 52a, 52b, cleaning apparatus 54, 56 for pretreatment, an activation treatment apparatus 58, a catalyst apparatus 60, an electroless plating apparatus 62, cleaning and drying apparatus 64, 66 for post treatment, and two transfer robots 68, 70 (Figure 4, column 8 line 63 to column 9 line 10). Thus, *Hongo'330* teaches separate pretreatment apparatus and post treatment apparatus for electroless plating. However, *Hongo'330* also does not teach or suggest a substrate processing module having an electroless processing cell and a pretreatment/post treatment cell, as set forth in the pending claims.

In conclusion, the Examiner erred in asserting that *Hongo'466* and *Hongo'330*, alone or in combination, teaches a detachable unit including two cells, a pretreatment cell and an electroless processing cell.

Second, the Examiner argued that it would be obvious to provide an additional unit including two cells in view of Figure 47 of *Hongo'466*. Applicant submits that this argument is moot because, as discussed above, the cited references do not teach or suggest a substrate processing a substrate processing module including a pretreatment/post treatment cell and an electroless processing cell.

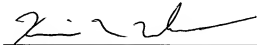
Third, the Examiner indicated that Applicant's argument, that *Hongo'466* fails to teach that the electroless plating unit 111 in Figure 11 is interchangeable, is not persuasive. Applicant submits that the Examiner mischaracterized Applicant's

argument. Applicant argued that the two plating modules 512 in previously cited Figure 47 are not interchangeable because they are mirror images of one another. Applicant actually pointed out to the Examiner that *Hongo'466* teaches that units 111-118 and measuring instruments 141-143 in Figure 31 are interchangeable. Applicant further argued that Figure 31 of *Hongo'466* does not teach or suggest the subject matter in the pending claims because the units 111 and 112 do not include a pretreatment/post treatment cell and an electroless processing cell.

**CONCLUSION**

For the reasons presented above, Appellant respectfully submits that the rejections over claims 26-28 are improper. Reversal of the rejections is respectfully requested.

Respectfully submitted,



---

Keith M. Tackett  
Registration No. 32,008  
Patterson & Sheridan, L.L.P.  
3040 Post Oak Blvd. Suite 1500  
Houston, TX 77056  
Telephone: (713) 623-4844  
Facsimile: (713) 623-4846  
Attorney for Appellant(s)